



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,758	07/21/2003	Inn-Sung Lee	YOM-0040	1734

23413 7590 10/13/2005

CANTOR COLBURN, LLP  
55 GRIFFIN ROAD SOUTH  
BLOOMFIELD, CT 06002

EXAMINER
----------

PHAM, TAMMY T

ART UNIT	PAPER NUMBER
----------	--------------

2675

DATE MAILED: 10/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/626,758

Applicant(s)

LEE ET AL.

Examiner

Tammy Pham

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
- Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 1-2, 5-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin (US Patent No: 6,661,181 B2) in view of Jang (US Pub. No: 2001/0011980 A1).

As for claim 1, Shin teaches of an apparatus of driving a liquid crystal display comprising: first and second lamp units (223a, b); a first transformer (T1) including a primary side and a secondary side having a first terminal connected to the first lamp unit (223a) and a second terminal; a second transformer (T2) including a primary side and a secondary side having a first terminal connected to the second terminal of the secondary side of the first transformer (T1) and a second terminal connected to the second lamp (223b) unit in column 10, lines 42-48.

Shin goes on to teach of a driver converting a DC signal into an AC signal and supplying the AC signal to the primary sides of the first and the second transformers (T1, T2) in column 6, lines 42-45.

What Shin does not teach is voltage sensor.

Jang teaches of and a voltage sensor (24) for sensing a voltage at a middle point in section [0022].

It would have been obvious to one with ordinary skill in the art at the time the invention was made to combine the voltage sensor of Jang with the driving apparatus of Shin in order to prevent white screen error (see Jang: section [0003]).

As for claims 2 and 12, Jang teaches of the apparatus of claim 1, wherein the driver is shut down when the voltage sensed by the voltage sensor is larger than a reference voltage in section [0047]. The section mentions that Q1 is turned on only if the voltage is above a certain threshold.

As for claim 5, Jang teaches that the apparatus of claim 2, further comprising an on/off controller supplying an off signal to the driver in response to the voltage sensed by the voltage sensor in section [0047] and as discussed above in dealing with claim 2.

As for claim 6, Shin teaches that the apparatus of claim 5, further comprising a feedback controller detecting a current flowing through the first and the second lamp units and controlling the on/off controller based on the detected current in column 11, lines 1-5. The section mentions that the stabilizing circuit (227) stabilizes the current of the circuit, hence the apparatus must include a method to detect the flowing current.

As for claim 7, Shin teaches that the apparatus of claim 1, wherein each of the first and the second lamp units (223a, b) comprises a single lamp in Fig. 8. Two lamps are shown but since they are interconnected, they can be considered one entity as the claim limitations specifies,

As for claim 8, Shin teaches that the apparatus of claim 1, wherein each of the first and the second lamp units (223a, b) comprises a plurality of lamps connected in series in Fig. 8 where it is clear that the connection of the lamps are in series.

As for claim 10, Shin teaches that the apparatus of claim 1, wherein the primary sides of the first and the second transformers (T1, 2) are connected in parallel to the driver as shown in Fig. 9.

As for claim 11, Shin teaches of a liquid crystal display comprising: a lighting unit including first and second lamps (223a,b), first and second transformers (T1, 2) respectively connected to the first and the second lamps (223a,b), including primary sides and secondary sides, and transmitting an AC signal for driving the first and the second lamps (223a,b) in column 10, lines 42-48.

Shin goes on to teach of a driver supplying a signal to the primary sides of the first and the second transformers (T1,2) in column 6, lines 42-45.

What Shin does not teach is voltage sensor.

Jang teaches of and a voltage sensor (24) for sensing a voltage at a middle point in section [0022].

It would have been obvious to one with ordinary skill in the art at the time the invention was made to combine the voltage sensor of Jang with the driving apparatus of Shin in order to prevent white screen error (see Jang: section [0003]).

2. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin (US Patent No: 6,661,181 B2) in view of Jang (US Pub. No: 2001/0011980 A1) and Miyazaki (US Pub. No: 2002/0154080 A1).

As for claim 3, Shin teaches of an apparatus and Jang teaches of a voltage sensor.

But neither Shin nor Jang teaches that the voltage sensor consists of a voltage divider.

Miyazaki teaches that the apparatus of claim 2, further comprising a voltage divider for dividing the voltage at the middle point and providing the divided voltage for the voltage sensor in section [0052].

It would have been obvious to one with ordinary skill in the art at the time the invention was made to combine the voltage divider of Miyazaki with the teachings of Shin and Jang in order to divide the voltage (see Miyazaki: section [0047]).

As for claim 4, Miyazaki teaches that the apparatus of claim 3, wherein the voltage divider comprises first and second resistors serially connected to the middle point in Fig. 5 and in section [0052].

3. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shin (US Patent No: 6,661,181 B2) in view of Hsu (US Patent No: 6,812,921 B2).

As for claim 9, Shin teaches of an apparatus.

But Shin does not teach of any resistors connected to the lamps.

Hsu teaches that the apparatus of claim 1, further comprising first and second resistors connected to the first and the second lamp units, respectively, and commonly connected to a ground in Fig. 1b.

It would have been obvious to one with ordinary skill in the art at the time the invention was made to include the resistors with the lamps in order to create a power saving circuit and method for controlling driving circuit (see Hsu: column 1, lines 10-15).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tammy Pham whose telephone number is (571) 272-7773. The examiner can normally be reached on 8:00-5:30 (Mon-Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*TP*

Tammy Pham  
September 26, 2005

AMR A. AWAD  
PRIMARY EXAMINER  
*AMR A. AWAD*